

Appl. No. 09/684,103
Reply to 4/29/05 Office Action

Customer No. 41,230

LISTING OF CLAIMS

Claims 7-29, 78-89, and 146-149 are pending in the present application. This Listing of Claims replaces all prior versions, and listings, of claims in the above-captioned application.

1-6. (Cancelled)

7. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly processing all the bills in the stack, the device comprising:
an input receptacle adapted to receive a stack of bills to be processed ;
at least one output receptacle adapted to receive the bills after each of the bills have been processed;

a transport mechanism adapted to transport the bills, one at a time, from the input receptacle to the at least one output receptacle along a transport path;

a magnetic scanhead disposed adjacent to the transport path, the scanhead including a plurality of closely spaced magnetic sensors each adapted to detect the presence of a security thread within the bills, the scanhead being adapted to determine the location of the security thread within the bill;

a memory adapted to store master security thread location information corresponding to a plurality of denominations of currency bills; and

an evaluating unit adapted to determine the denomination of the currency bill when the determined security thread location favorably compares to the master security thread location information, the evaluating unit being adapted to generate an error signal when the determined security thread location does not favorably compare to master security thread location information.

8. (Original) The currency evaluation device of claim 7 wherein the plurality of sensors are linearly aligned within the scanhead.

9. (Original) The currency evaluation device of claim 8 wherein scanhead is disposed transverse to the document transport path.

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10. (Original) The currency evaluation device of claim 9 wherein the spacing between each of the plurality of sensors is about one millimeter.

11. (Original) The currency evaluation device of claim 9 wherein the spacing between each of the plurality of sensors is less than about one millimeter.

12. (Original) The currency evaluation device of claim 7 wherein the transport mechanism is adapted to transport each of the bills such that a long edge of the bill is the leading edge of the bill.

13. (Previously Presented) The currency evaluation device of claim 7 wherein the bills are processed at a rate of at least 800 bills per minute.

14. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly processing all the bills in the stack, the device comprising:

an input receptacle adapted to receive a stack of bills to be processed;

at least one output receptacle adapted to receive the bills after each of the bills have been processed;

a transport mechanism adapted to transport the bills, one at a time, from the input receptacle to the at least one output receptacle along a transport path;

a magnetic scanhead disposed adjacent to the transport path, the scanhead including a plurality of closely spaced magnetic sensors, each of the magnetic sensors being adapted to detect magnetic zone printing configuration information from each of the currency bills, each of the magnetic sensors adapted to detect the presence of a security thread within each of the bills, the magnetic scanhead being adapted to determine the location of a detected security thread within a currency bill;

a memory adapted to store master magnetic zone printing configuration information and master security thread location information; and

an evaluating unit adapted to determine the denomination of each of the bills by comparing the detected magnetic zone printing configuration information to the stored master magnetic zone printing configuration information, the evaluating unit being adapted to

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authenticate each of the currency bills by comparing the determined security thread location to the stored master security thread location information.

15. (Original) The currency evaluation device of claim 14 wherein the plurality of sensors are linearly aligned within the scanhead.

16. (Original) The currency evaluation device of claim 15 wherein scanhead is disposed transverse to the document transport path.

17. (Original) The currency evaluation device of claim 16 wherein the spacing between each of the plurality of sensors is about one millimeter.

18. (Original) The currency evaluation device of claim 16 wherein the spacing between each of the plurality of sensors is less than about one millimeter.

19. (Original) The currency evaluation device of claim 14 wherein the transport mechanism is adapted to transport each of the bills such that a long edge of the bill is the leading edge of the bill.

20. (Previously Presented) The currency evaluation device of claim 14 wherein the bills are processed at a rate of at least 800 bills per minute.

21. (Previously Presented) A currency evaluation device for processing different types of currency bills including currency from different counties:

an input receptacle adapted to receive a stack of bills to be processed;

at least one output receptacle adapted to receive the bills after each of the bills have been processed;

a transport mechanism adapted to transport the bills, one at a time, from the input receptacle to the at least one output receptacle along a transport path;

a magnetic scanhead disposed adjacent to the transport path, the scanhead including a plurality of closely spaced magnetic sensors, each of the magnetic sensors being adapted to detect

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the presence of a security thread within each of the bills, the magnetic scanhead being adapted to determine the location of the detected security thread within a bill;

a memory adapted to store a plurality of master security thread information corresponding to a plurality of types of currency, the master security thread information defining a predetermined number of security thread locations for each of the plurality of currency types, the predetermined number corresponding to the number of denominations of bills in a particular currency type; and

an evaluating unit adapted to process each of the bills by comparing the determined security thread location to the master security thread location information corresponding to the type of currency, the evaluating unit being adapted to generate an error signal when the determined security thread location information does not favorably compare to one of the security locations for the particular currency type specified by the user.

22. (Previously Presented) The currency processing device of claims 21 wherein the evaluating unit is adapted to determine the type of currency being processed from among a plurality of currency types, the plurality of currency types corresponding to currency issued by a plurality of countries.

23. (Previously Presented) The currency processing device of claim 21 further comprising a user interface adapted to receive information from a user of the currency evaluation device specifying the type of currency to be processed.

24. (Previously Presented) The currency processing device of claim 21 wherein the plurality of sensors are linearly aligned within the scanhead.

25. (Previously Presented) The currency processing device of claim 24 wherein scanhead is disposed transverse to the document transport path.

26. (Previously Presented) The currency processing device of claim 25 wherein the spacing between each of the plurality of sensors is about one millimeter.

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27. (Previously Presented) The currency processing device of claim 25 wherein the spacing between each of the plurality of sensors is less than about one millimeter.

28. (Previously Presented) The currency processing device of claim 21 wherein the transport mechanism is adapted to transport each of the bills such that a long edge of the bill is the leading edge of the bill.

29. (Previously Presented) The currency processing device of claim 21 wherein the bills are evaluated at a rate of at least 800 bills per minute.

30-77. (Cancelled)

78. (Previously Presented) A currency evaluation device adapted to receive a currency bill having a magnetic attribute and processing the currency bill, the device comprising:
an inlet adapted to receive a currency bill to be processed;
an output receptacle adapted to receive the bill after the bill has been processed;
a transport mechanism adapted to transport the bill from the inlet to the output receptacle along a transport path such that the long edge of the bill is the leading edge of the bill;

a magnetic scanhead disposed adjacent to the transport path, the scanhead including a plurality of linearly aligned and closely spaced magnetic sensors, the scanhead being adapted to detect the presence of a magnetic attribute of the bill when the magnetic attribute has a leading edge dimension greater than about one millimeter, the plurality of magnetic sensors covering a substantial portion of a long dimension of the bill, the scanhead being adapted to retrieve characteristic magnetic information from the currency bill, the scanhead being disposed transverse the transport path;

a memory adapted to store master magnetic characteristic information corresponding to a plurality of types of currency bills; and

an evaluating unit adapted to process the currency bill by comparing the retrieved magnetic characteristic information to the stored master magnetic characteristic information, the evaluating unit being adapted to generate an error signal when the retrieved characteristic

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magnetic information does not favorably compare to the stored master magnetic characteristic information.

79. (Original) The currency evaluation device of claim 78 wherein the plurality of sensors are linearly aligned within the scanhead.

80. (Original) The currency evaluation device of claim 78 wherein scanhead is disposed transverse to the document transport path.

81. (Original) The currency evaluation device of claim 80 wherein the spacing between each of the plurality of sensors is less than about five millimeters.

82. (Original) The currency evaluation device of claim 80 wherein the spacing between each of the plurality of sensors is less than about four millimeters.

83. (Original) The currency evaluation device of claim 80 wherein the spacing between each of the plurality of sensors is less than about three millimeters.

84. (Original) The currency evaluation device of claim 80 wherein the spacing between each of the plurality of sensors is less than about two millimeters.

85. (Original) The currency evaluation device of claim 80 wherein the spacing between each of the plurality of sensors is about one millimeter.

86. (Original) The currency evaluation device of claim 80 wherein the spacing between each of the plurality of sensors is less than about one millimeter.

87. (Original) The currency evaluation device of claim 80 wherein the spacing between each of the plurality of sensors is about 0.5 millimeter.

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88. (Original) The currency evaluation device of claim 78 wherein the transport mechanism is adapted to transport each of the bills such that a long edge of the bill is the leading edge of the bill.

89. (Previously Presented) The currency evaluation device of claim 78 wherein the bills are processed at a rate of at least 800 bills per minute.

90-145. (Cancelled)

146. (Previously Presented) A currency evaluation device adapted to receive a stack of currency bills and rapidly processing all the bills in the stack including bills having a magnetic attribute, the device comprising:

an input receptacle adapted to receive a stack of bills to be evaluated;

at least one output receptacle adapted to receive the bills after each of the bills have been evaluated;

a transport mechanism adapted to transport the bills, one at a time, from the input receptacle past an evaluation region to the at least one output receptacle along a transport path, the transport mechanism being adapted to transport bills such that their narrow dimension is parallel to the direction of transport;

a magnetic scanhead disposed adjacent to the bill evaluation region, the scanhead including a plurality of closely spaced magnetic sensors each adapted to detect the presence of a magnetic attribute of currency bills, the plurality of magnetic sensors covering a substantial portion of a long dimension of the currency bills, the scanhead being adapted to retrieve magnetic characteristic information from a passing currency bill;

a memory adapted to store master magnetic characteristic information corresponding to a plurality of types of currency bills; and

an evaluating unit adapted to process the currency bill by comparing the retrieved magnetic characteristic information to the stored master magnetic characteristic information, the evaluating unit being adapted to generate an error signal when the retrieved magnetic characteristic information does not favorably compare to the stored master magnetic characteristic information.

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147. (Previously Presented) The currency evaluation device of claim 146 wherein the spacing between each of the plurality of magnetic sensors is less than about one millimeter.

148. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly processing all the bills in the stack including bills having a magnetic attribute, the device comprising:

an input receptacle adapted to receive a stack of bills to be evaluated;

at least one output receptacle adapted to receive the bills after each of the bills have been evaluated;

a transport mechanism adapted to transport the bills, one at a time, from the input receptacle past an evaluation region to the at least one output receptacle along a transport path, the transport mechanism being adapted to transport bills such that a wide edge of the bills is the leading edge of the bills;

a magnetic scanhead disposed adjacent to the bill evaluation region, the scanhead including at least two closely spaced magnetic sensors each adapted to detect the presence of a magnetic attribute of currency bills, the at least two magnetic sensors being adapted to scan a substantially continuous segment of each of the bills, the substantially continuous segment being parallel to the narrow edge of the currency bills, the scanhead being adapted to retrieve magnetic characteristic information from the currency bill;

a memory adapted to store master magnetic characteristic information corresponding to a plurality of types of currency bills; and

an evaluating unit adapted to process the currency bill by comparing the retrieved magnetic characteristic information to the stored master magnetic characteristic information, the evaluating unit being adapted to generate an error signal when the retrieved magnetic characteristic information does not favorably compare to the stored master magnetic characteristic information.

149. (Previously Presented) The currency evaluation device of claim 147 wherein the spacing between each of the at least two magnetic sensors is less than about one millimeter.

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